L Number	Hits	Search Text	DB	Time stamp
1	6559	(latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance)))	USPAT; US-PGPUB	2002/03/27 10:21
2	7619	(batt or (fiber or fibrous) adj (blanket or mat or web) or nonwoven or non$1woven or (non adj1 woven)).ti,ab.	USPAT; US-PGPUB	2002/03/27 09:54
3	167	(water near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance))))	USPAT; US-PGPUB	2002/03/27 10:00
4	9	((batt or (fiber or fibrous) adj (blanket or mat or web) or nonwoven or non$1woven or (non adj1 woven)).ti,ab.) and ((water near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance)))))	USPAT; US-PGPUB	2002/03/27 09:56
5	324	((solid or particle or particulate or matter or powder or pulverulent) near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance))))	USPAT; US-PGPUB	2002/03/27 10:05
6	42	((batt or (fiber or fibrous) adj (blanket or mat or web) or nonwoven or non$1woven or (non adj1 woven)).ti,ab.) and (((solid or particle or particulate or matter or powder or pulverulent) near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance)))))	USPAT; US-PGPUB	2002/03/27 10:05
7	324	((solid or particle or particulate or matter or powder or pulverulent) near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance))))	USPAT; US-PGPUB	2002/03/27 10:09
8	42	((batt or (fiber or fibrous) adj (blanket or mat or web) or nonwoven or non$1woven or (non adj1 woven)).ti,ab.) and (((solid or particle or particulate or matter or powder or pulverulent) near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance)))))	USPAT; US-PGPUB	2002/03/27 10:09
9	867	(foam or foaming or foamed or foamable) near2 (binder or ((bonding or binding) adj1 (agent or material or substance)))	USPAT; US-PGPUB	2002/03/27 10:23
10	1	(((solid or particle or particulate or matter or powder or pulverulent) near3 weight) same ((latex or emulsion or ((water or aqueous) adj1 (based or born$2)) or suspension water$1based or aqueous$1based) near2 (binder or ((bonding or binding) adj1 (agent or material or substance))))) same ((foam or foaming or foamed or foamable) near2 (binder or ((bonding or binding) adj1 (agent or material or substance))))	USPAT; US-PGPUB	2002/03/27 10:24

DOCUMENT-IDENTIFIER: US 4176108 A
TITLE: Heat-coagulable latex binders and process for the preparation thereof

---------- KWIC ---------

ABPL:
An improved **latex binder for nonwoven** webs comprising an acrylate- and/or vinyl acetate-based copolymer containing 0.1-10% by weight of 2-hydroxyethyl or 2-hydroxypropyl acrylate or methacrylate is prepared by employing in combination with the copolymer 0.2-10% by weight, on latex solids, of anionic surfactant and 0.3-15% by weight, on latex solids, of nonionic surfactant in selected relative proportions and by adding to the copolymer 1-40% by **weight, on latex solids, of a water**-soluble salt. The resultant binder is characterized by being stable to coagulation at room temperature but coagulable at a temperature between 40.degree. and 85.degree. C. In the preparation of nonwoven fiber material, a nonwoven web is impregnated with the copolymer **latex binder,** heated to a temperature of within 40.degree. and 85.degree. C. sufficient to coagulate the binder within the web and thus prevent migration, and finally dried to form a chemically bonded, nonwoven fiber material in sheet form.

DOCUMENT-IDENTIFIER: US 4172173 A
TITLE: Ethylene-vinyl acetate polymer binders for non-woven fabrics

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CLPR:
1. A non-woven fabric having improved flexibility and hand softness, which is formed from a web of fibers bound together by a polymer composition; said polymer composition having been prepared from an ethylene-vinyl acetate **latex binder,** wherein the ethylene-vinyl acetate copolymer contains about 70 to about 90 weight percent vinyl acetate, and said **latex binder** contains from about 35 to about 65 weight percent of colloidally-suspended ethylene-vinyl acetate, and wherein said polymer composition contains from about 5 to about 20 weight percent, based on the total polymer composition weight, of a water soluble or water dispersible polyoxypropylene/polyoxyethylene block polymer which comprises (1) a polyoxypropylene hydrophobic base of from about 2000 to about 4000 in molecular weight, and (2) polyoxyethylene hydrophilic groups at each end of the block which amount to about 10 percent to 37 weight percent of the block polymer weight.

CLPR:
2. A non-woven fabric having improved flexibility and hand softness, which is formed from a web of fibers bound together by a polymer composition; said polymer composition having been prepared from an ethylene-vinyl acetate **latex binder,** wherein the ethylene-vinyl acetate copolymer contains about 70 to about 90 weight percent vinyl acetate, and said **latex binder** contains from about 35 to about 65 weight percent of colloidally-suspended ethylene-vinyl acetate, and wherein said polymer composition contains from about 5 to about 20 weight percent of a water-soluble 1,3-dioxolane oligomer.

DOCUMENT-IDENTIFIER: US 5523345 A
TITLE: Latex binder compositions

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BSPR:
The **latex binder** compositions of the invention have been found to exhibit good long-term colloidal stability, that is, the polymeric binder particles do not tend to coagulate or agglomerate to render the composition useless for its intended purpose. Thus, very low levels of coagulant, especially fine-size coagulants such as would be retained on a 325 Tyler mesh, exist after filtering of the latex. Such levels are generally 0.1 percent or less, desirably 0.05 percent or less, and more desirably 0.02 percent or less, and preferably 0.01 percent or less by weight based upon the total **weight of the latex solids**. Another advantage of the present invention is high conversion of all the monomers such as at least 95 percent thereof, desirably at least 97 or 98 percent and preferably at least 99 percent of all monomers.

CLPR:
3. A **latex binder** according to claim 2, wherein the amount of said optical acrylic acid is less than 0.5 parts by weight, wherein said binder has a formaldehyde content of less than 150 parts by weight per million parts by weight of said **latex binder, wherein said latex** has less than 0.1 percent by weight of coagulant retained on 325 Tyler mesh based upon the total **weight of the solids of said latex binder** composition, and wherein the conversion of all of said monomers is at least 95 percent.

CLPR:
4. A **latex binder** composition according to claim 3, wherein said (a) conjugated diene monomer is butadiene, wherein said (b) vinyl substituted aromatic monomer is styrene, wherein the amount of said butadiene monomer is from about 50 to about 65 parts by weight, wherein the amount of said styrene monomer is from about 50 to about 35 parts by weight, wherein said acrylamide monomer or derivative thereof is acrylamide in an amount of from about 0.5 to about 2.0 parts by weight, wherein the amount of said methacrylic acid is from about 0.5 to about 2.0 parts by weight, wherein said N-methylol-functional type compound is N-methylolacrylamide in an amount of from about 0.5 to about 3 parts by **weight, wherein said particle** size is from about 1,200 to about 1,400 .ANG., and wherein said formaldehyde content is less than 100 parts per million.

DOCUMENT-IDENTIFIER: US 4612226 A
TITLE: Fabric having excellent wiping properties

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DEPR:
The resin binder composition can be the conventional aqueous latex compositions, such as acrylic latexes, polyvinyl acetate latexes, ethylene-vinyl acetate latexes, carboxylated styrene-butadiene rubber latexes, or the like. Acrylic **latex binders** are preferred for maximum resistance to staining. One important difference compared with conventional procedures is that the resin binder composition will usually be quite dilute, e.g., from about 1/2 to about 5 **weight percent solids,** when applied by padding or dipping onto a dry web. Slightly higher solids may be needed when applying to a wet web.

DOCUMENT-IDENTIFIER: US 4441962 A
TITLE: Soft, absorbent tissue paper

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BSPR:
Binder materials useful in this process include all of those commonly used in papermaking, such as the **latex type binder emulsions**. Specific examples of binder include the self-crosslinking acrylic latex emulsion sold by The Rohm & Haas Co., Philadelphia, Pa., under the designation TR520. (When this particular binder is used, the binder system further comprises about 0.5% by **weight of latex solids** ammonium nitrate as a latent acid catalyst, about 1% nonionic surfactant such as Pluronic L-92 sold by BASF Wyandotte Corporation of Wyandotte, Mich., and sufficient ammonium hydroxide to adjust the pH of the binder solution to about 5.2.)

DOCUMENT-IDENTIFIER: US 4292271 A
TITLE: Methods of applying bonding materials onto fibrous webs

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ABPL:
Methods by which a dry-formed loose fibrous web is bonded by applying to one of its surfaces a low add-on level of a relatively high binder solids concentration bonding material to form a once-bonded web, and to the other side of the web, a greater add-on level of a relatively lower solids concentration bonding material, the first-applied emulsion preferably adding from about 20% to about 40% binder **solids by weight,** and the second-applied adding the rest of the total binder solids to be included in the fibrous web product. The bonding material can be a solution or emulsion. Preferably, the first and second-applied **bonding materials are water-based** latex emulsions, the solids concentration of the first-applied emulsion is from about 15% to about 25% by weight, that of the second-applied emulsion is from about 10% to about 20% by weight based on the total binder solids to be included in the fibrous web product, and a vacuum draws the second-applied bonding material into the web.

DEPR:
The binder solids concentration of the first-applied binding material may be the same as that of the second-applied bonding material when a vacuum is employed to assist penetration of the second-applied bonding material, but preferably it is greater than that of the second-applied bonding material. It has been found that loose fibrous webs comprised of softwood Kraft papermaking fibers deposited on brass foraminous forming wires for ultimately forming from about 38 lbs. to about 50 lbs. basis weight web products (per 3000 sq. ft. ream) can be satisfactorily bonded at Bond I and handled and transferred between Bond I and Dry I and from the Dry I to Bond II with the latex solids-containing emulsion Airflex 120, having a **latex binder** solids concentration from above 15% to about 25% by weight preferably above about 17%, and most preferably about 20% by weight, based on the total weight of the emulsion applied to the loose web. It has been found that apparatus configurations which employ a double carrier wire and roller support system such as indicated by the dotted lines in FIG. 1, require the transfer of once-bonded webs from the Bond I carrier to the Dry I carrier, and do not impart a vacuum from vacuum box 36, a first-applied emulsion of Airflex 120 diluted to a **solids concentration of 17% by weight** may so wet the loose web as to at times tend to cause problems in separating it from the Bond I carrier and

in transferring it to the Dry I carrier. In the just described double carrier system, solids concentrations at or below 15% by weight so wet the loose web as to unduly adhere to the Bond I carrier and render the once-bonded web commercially too difficult to separate and transfer it to the Dry I carrier wire. It has also been found that as the binder-solids concentration increases, it becomes increasingly difficult to spray the emulsion and to obtain proper latex solids penetration into the loose web. With respect to Airflex 120, at concentrations above 25% by **weight, some latex solids** increasingly accumulate on the loose web surface as wasteful, penetration-preventing clumps or aggregates which do not contribute to web product strength. It can be generally stated then that the solids concentration of the first-applied emulsion should be great enough to provide the integrity the particular apparatus configuration requires to permit continuous transfers at commercial speeds from carrier to carrier between either Bond I and Dry I, or between Dry I and Bond II, yet not so great as to cause wasteful surface accumulations of solids and consequent reductions as to solids penetration and efficiency.

DEPR:
In preferred embodiments of the methods of this invention, the binder solids concentration of the second-applied bonding material is generally within the range of from about 10% to about 20%, although for water based latex emulsions, desirably it is about 17%, preferably about 15%, by weight, based on the total weight of the emulsion applied to the web DBW. Although one advantage provided by the methods of this invention is the ability to use a lower amount of total binder solids in the web product, with respect to the apparatus shown in FIG. 1 and the bonding of the inverted side of dried once-bonded web DBW, reducing the solids concentration of the second-applied emulsion below 15% by weight has not been found to increase the efficiency of the **latex binder** solids with respect to the web product's tensile strength, nor does it increase a web's tensile strength over that obtained with a 15% concentration. In fact, dilution to below 15% starts to significantly increase the load of dryer 46, and dilution to below 10% binder **solids by weight** totally wets the twice-bonded web and consequently unduly loads dryer 46. However, for web products whose basis weight is heavier than the 38 to 50 lbs. range suitable for making moderate-to-heavy wipers, for example, for web products whose basis weight is about 100 lbs. (per 3000 sq. ft. ream), emulsions diluted to less than 10% by **weight binder solids** might well provide the desired binder solids efficiencies. Likewise, with respect to lighter basis weight webs such as tissue products whose basis weight is near 20 lbs. (per 3000 sq. ft. ream), the optimum solids concentration might well be near 20% by weight.

CLPV:

applying to the unbonded side of the once-bonded web a binder solids-containing emulsion in an amount which adds a major percentage by **weight of the total binder solids** to be included in the web, said first-applied **emulsion having a greater binder** solids concentration than said second-applied emulsion.

CLPV:
applying a **water-based latex binder** solids-containing **emulsion bonding material** onto one side of the loose fibrous web to add to it from about 20% to about 40% by **weight of the total binder solids** to be included in the fibrous web product,

DOCUMENT-IDENTIFIER: US 4291087 A
TITLE: Non-woven fabrics bonded by radiation-curable, hazard-free binders

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CLPR:
3. The process of claim 1 wherein the **binder comprises an aqueous emulsion** polymer, containing from about 5% to 60% by **weight of resin solids,** the amount of binder dispersion being about 10% to 80% by weight based on the amount of fiber and binder combined.

CLPR:
5. The process of claim 2 or 4 wherein the binder comprises an aqueous dispersion of a hydrophobic **binder comprising an emulsion** polymer, containing from about 5% to 60% by **weight of resin solids,** the amount of binder dispersion being about 10% to 80% by weight based on the amount of fiber and binder combined.

DOCUMENT-IDENTIFIER: US 4018647 A
TITLE: Process for the impregnation of a wet fiber web with a heat sensitized foamed latex binder

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CLPR:
3. The process as claimed in claim 1 wherein said **latex binder** composition contains a self-reactive poly (ethyl acrylate) latex and from about 0.05% to about 3% by **weight, calculated as dry matter on the dry weight** of latex, of a siloxane oxyalkylene block copolymer as a heat sensitizer, and coagulates at a temperature in the range of 35.degree. - 65.degree. C.